

What is claimed is:

1. A metal hydride alkaline storage cell comprising:
a positive electrode;
a separator impregnated with an electrolyte: and
5 a negative electrode comprising hydrogen-absorbing alloy powder, wherein
said hydrogen-absorbing alloy powder has a layer of hydrogen-absorbing
alloy oxide formed on the surface thereof, and a catalytic metal or metal
compound is dotted on said layer of hydrogen-absorbing alloy oxide in a
granular state by adding a substance which is soluble in the electrolyte.
10 said substance selected from the group consisting of a metal fluoride, a
metal chloride, a metal iodide, and a metal sulfide, and a proportion of said
substance to said hydrogen-absorbing alloy powder is restricted within the
range of 0.1 to 2.5 wt.%.
2. The metal hydride alkaline storage cell of claim 1 wherein said
15 metal fluoride is at least one metal fluoride selected from the group
consisting of a cobalt fluoride, a nickel fluoride, an aluminum fluoride, and
a copper fluoride.
3. The metal hydride alkaline storage cell of claim 1 wherein said
metal fluoride is CoF_2 and/or NiF_2 .
20 4. The metal hydride alkaline storage cell of claim 1 wherein said
metal chloride is a cobalt chloride and/or a nickel chloride.
5. The metal hydride alkaline storage cell of claim 1 wherein said
metal iodide is a cobalt iodide and/or a nickel iodide.
6. The metal hydride alkaline storage cell of claim 1 wherein said
25 metal sulfide is a cobalt sulfide and/or a nickel sulfide.

7. The metal hydride alkaline storage cell of claim 1, 2, 3, 4, 5. or 6 wherein said hydrogen-absorbing alloy powder is selected from the group consisting of rare-earth element based hydrogen-absorbing alloy powder, Zr-Ni based hydrogen-absorbing alloy powder, Ti-Fe based hydrogen-absorbing alloy powder, Zr-Mn based hydrogen-absorbing alloy powder, Ti-Mn based hydrogen-absorbing alloy powder, and Mg-Ni based hydrogen-absorbing alloy powder.

8. The metal hydride alkaline storage cell of claim 1, 2, 3, 4, 5. or 6 wherein said hydrogen-absorbing alloy powder comprises hydrogen-absorbing alloy having a CaCu_5 type crystal structure expressed by the general formula $\text{MmNi}_a\text{Co}_b\text{Al}_c\text{Mn}_d$, where $a>0$, $b>0$, $c>0$, $d\geq 0$, and $4.4\leq a+b+c+d\leq 5.4$.

9. A method of manufacturing a metal hydride alkaline storage cell comprising the steps of:

a first step of preparing a negative electrode by applying a paste onto a substrate, wherein said paste contains hydrogen-absorbing alloy powder and a metal compound which is soluble in an electrolyte and selected from the group consisting of a metal fluoride, a metal chloride, a metal iodide, and a metal sulfide, in the proportion of 0.1 to 2.5 wt.% based on the weight of said hydrogen-absorbing alloy powder; and

a second step of placing said negative electrode and a positive electrode into a cell can with disposing a separator therebetween, and thereafter pouring an electrolyte into said cell can.

10. A method of manufacturing a metal hydride alkaline storage cell comprising the steps of:

a first step of preparing a negative electrode by applying a paste containing hydrogen absorbing alloy powder onto a substrate; and
a second step of placing said negative electrode and a positive electrode into a cell can with disposing a separator therebetween, and thereafter pouring
5 an electrolyte into said cell can, wherein said electrolyte contains a metal compound which is soluble in said electrolyte and selected from the group consisting of a metal fluoride, a metal chloride, a metal iodide, and a metal sulfide in the proportion of 0.1 to 2.5 wt.% based on the weight of said hydrogen-absorbing alloy powder.

10 11. The method of claim 9 or 10 wherein said metal fluoride is at least one metal fluoride selected from the group consisting of a cobalt fluoride, a nickel fluoride, an aluminum fluoride, and a copper fluoride.

12. The method of claim 9 or 10 wherein said metal fluoride is CoF_2 and/or NiF_2 .

15 13. The method of claim 9 or 10 wherein said metal chloride is a cobalt chloride and/or a nickel chloride.

14. The method of claim 9 or 10 wherein said metal iodide is a cobalt iodide and/or a nickel iodide.

20 15. The method of claim 9 or 10 wherein said metal sulfide is a cobalt sulfide and/or a nickel sulfide.

16. The method of claim 9 or 10 wherein said hydrogen-absorbing alloy powder is selected from the group consisting of rare-earth element based hydrogen-absorbing alloy powder, Zr-Ni based hydrogen-absorbing alloy powder, Ti-Fe based hydrogen-absorbing alloy powder, Zr-Mn based
25 hydrogen-absorbing alloy powder, Ti-Mn based hydrogen-absorbing alloy

powder, and Mg-Ni based hydrogen-absorbing alloy powder.

17. The method of claim 9 or 10 wherein said hydrogen-absorbing alloy powder comprises hydrogen-absorbing alloy having a CaCu_5 type crystal structure expressed by the general formula $\text{MmNi}_a\text{Co}_b\text{Al}_c\text{Mn}_d$, where
- 5 $a>0$, $b>0$, $c>0$, $d\geq 0$, and $4.4\leq a+b+c+d\leq 5.4$.